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BOOK REVIEWS.

THE PLAY OF ANIMALS. By *Karl Groos*, Professor of Philosophy in the University of Basel. Translated with the Author's co-operation by Elizabeth L. Baldwin. With a Preface and an Appendix by J. Mark Baldwin, Professor in Princeton University. New York : D. Appleton and Company. Pages, xxvi+341.

The importance of play in relation to the development of the infant mind is so great, and yet so little has been written on the subject and presented in English dress, that this excellent translation of Professor Groos's work will be received with a hearty welcome by English and American psychologists. Devoted as it is almost entirely to the play of animals, the work might be thought to belong exclusively to the field of animal psychology, but now that the principles of evolution have come to be recognised as applicable to the development of the mental nature, as well as to that of the physical organism, the exclusive view must be regarded as erroneous. Plants, animals, and man form links in a continuous chain of being and therefore the nature of man cannot be understood without a study of the organic existences below him in the scale.

All but about 120 pages of Professor Groos's work is devoted to a descriptive account of animal play and the details he gives furnish ample material for the deduction of the principles which govern it, although they do not admit of criticism in an ordinary review. Nevertheless, it is interesting to take note of the great variety displayed in the amusements which animals indulge in, and their close resemblance to those of human childhood. First we have a group of phenomena to which the term experimentation is applied. This term is used to denote such movements of young animals as enable them first to win the mastery over their own organs and then over external objects. They include stretching and straining the limbs ; tasting, seizing, and clawing ; gnawing and scratching ; exercising the voice ; rending, pulling, tearing, tugging, kicking, lifting and dropping objects, etc., all of which are practised by the human infant no less than by the young animal. On such movements depend, says the author, the proper control of the body, muscular co-ordination, etc., while psychically they promote the development of the perceptive faculties, such as space-perception, attention, will-power, memory, etc. They

thus form the common foundation on which the specialised plays are built up. Then comes a series of plays, designated movement plays, which involve change of place for its own sake, such as practice in locomotion, walking, running, leaping, climbing, flying, swimming. Hunting and fighting differ from these movements in having a specific aim. The latter includes teasing, in which many animals are great adepts, tussling among young animals and playful struggles among grown animals. A series of curious plays are those connected with the constructive arts, including the methods of building ornamentation employed by some animals, chiefly birds. The author traces these to a sensuous delight in what is bright and gay, which is an important antecedent to æsthetic pleasure, "because it assures a lively perception of the object," but not to be mistaken for æsthetic pleasure itself. In relation to nursing plays, most of the animals concerned in which had lost their own young and were trying to find an outlet for the fostering instincts, Professor Groos remarks that when half-grown birds assist in caring for the younger ones, "we have the veritable play of young creatures, in which, however, imitation is perhaps as much involved as the nurturing instinct."

We are here introduced to a very important series of animal actions, those which exhibit the influence of the imitative impulse. The author devotes a chapter to the consideration of the relation between play and instinct which contains a summary of the principles that give a psychology of play and from which the following quotation may be made, as well expressing in outline his special theory. After stating that the imitative impulse is an instinct directly useful in the serious work of life among most, if not among all, of the higher gregarious animals, and that all youthful play is founded on instinct, illustrations of which are to be found in the modes of play already referred to, he adds: "Besides these plays, which are founded on strongly developed instincts, and can therefore be practised without a model, there are many others worthy of consideration: those in which at least two instincts are involved—one an impulse only rudimentarily present, though easily aroused, and the other the accompanying imitative instinct. To this class belong the instances . . . of young birds learning to sing, probably, too, the barking of puppies, and the imitative play of little girls whose motherly tending of their dolls could hardly reach the perfection in which we see it without imitation. . . . Finally, it must be admitted that there are cases where the imitative impulse exceeds the limits of instinct and apparently works alone, as when apes imitate the actions of men, where parrots learn to speak intelligently, and when children play horse cars, railroad, hunter, teacher, and the like. But even here a latent desire to experiment contributes, and it is evident how necessary such play is to the development of mind and body."

In dealing with imitative play, Professor Groos considers the theory, propounded by James Mill in his *Analysis of the Phenomena of the Human Mind*, according to which imitation is of individual (not hereditary) origin, concluding that "the exercise of imitative impulse does not use tracts learned by association,

but rather inborn ones; in other words, that it is not acquired but inherited; it is an instinct." In this view he agrees with Herbert Spencer, but demurs to his assumption of the inheritance of acquired characters, preferring the principle of survival of the fittest, or selection, as the proper basis for a definition. To prove that imitation is useful, he takes the ground that it is an instinct "which works directly toward development of intelligence, since its tendency is to render many other instincts to a certain degree superfluous, and so encourage independence in the individual." The fact that imitation is strongest in the more intelligent animals supports that view, man himself being the imitative animal *par excellence*. The question arises, however, as to when imitation is in earnest and when merely playful, but the discrimination is easy to make by reference to the definition of play as "instinctive activity exerted for purposes of practice or exercise, and without serious intent." The author gives many interesting instances of imitative play, which is the most striking among birds that have acquired the art of speaking, but is to be seen also in the vocal practice of all animals when carried on in concert. He is of opinion that courtship is the unconscious basis of such sounds and of the curious movements which often accompany them, stating that "when the contagious influence of imitation becomes a factor in mass games, they are easily converted into veritable orgies." Here Professor Groos sees the operation of the principles that govern ethnology and the history of human civilisation. The plays of birds correspond with our general dance that is so closely connected with sexual excitement, the principal difference being that "the notions of the human dancer less clearly betray the courting instinct." It is there, nevertheless, and thus "we may learn much from the courtship of birds that is applicable to man as well."

In *curiosity* Professor Groos finds the only purely intellectual form of playfulness he has met with in the animal world. Curiosity is called "sportive apperception," and the primary reason for it is said to be the necessity for mental exercise added to the increase of knowledge. With it is often associated the æsthetic perception manifested in the absorbed attention with which some of the higher animals observe the movements of others, even of human beings. The attention is not conscious, however, in the ordinary sense, and hence the examples recorded of it are only elementary expressions of æsthetic pleasure, but they "serve to show that the sphere of æsthetics is infinitely wider than that of the beautiful."

The space at our command will allow of a merely cursory glance at the love plays which, owing to their being expressions of the sexual instinct, are among the most important phenomena of animal life, and to which the author devotes a special chapter. He first considers the objections made by Wallace and others to Darwin's theory of sexual selection, and concludes that as "the excited condition necessary for pairing and also a certain difficulty in its execution, are both useful for the preservation of the species," sexual selection is only a special case of natural selection. He divides love plays into five separate classes, those among young animals occupying the earliest place and coquetry in the female the latest, the in-

intermediate classes consisting of different forms of courtship. Professor Groos concludes his highly instructive work with a chapter on the psychological aspects of play, the principal content of which is the investigation of "make-believe" or "conscious self-illusion." He shows, moreover, that the psychic accompaniment of experimentation, the most elementary of all plays—the "joy in being a cause"—is the central idea of the whole conception of play. It permeates every kind of play, and has a significance not sufficiently appreciated even in artistic production and æsthetic enjoyment.

C. S. WAKE.

THE PREPARATION FOR CHRISTIANITY IN THE ANCIENT WORLD. A Study in the History of Moral Development. By *R. M. Wenley*, Professor of Philosophy in the University of Michigan. New York, Chicago, Toronto. Fleming H. Revell Company. Publishers of Evangelical Literature. 1898. Pages, 194. Price, 75 cents.

It appears from the Preface to this little book that it was prepared for the Church of Scotland "Guild Series," the design of which is "to deepen the intelligent interest of the laity in all questions connected with the origin, nature, history, and extension of the Christian religion." This the present volume cannot fail to do, as it is an able presentation of a difficult and important subject, by a writer who is well qualified to deal with it. Professor Wenley's earlier studies are well known and in his *Socrates and Christ* he has already gone over a portion of the ground covered by this work, the key to the argument of which is to be found in the introductory statement that Christianity "was born into a universal empire, the state of which at the moment is matter of history; all the circumstances of the time imperatively demanded the new revelation, and conspired to the successful propagation of the 'good news'." A preparation had been going on for a considerable period the commencement of which the author places in the Periclean age of Greece. It was then man first acquired some consciousness of his own worth, before which the questions that necessitated the Christian revelation were practically non-existent. For two centuries prior to Socrates the Greek mind regarded itself as one with nature. Hence, says Professor Wenley, religion was based on personification, and gradually came to be associated more and more with human qualities, the Hellenic gods assuming "clearly marked individual characteristics." During the same period, Greek thinkers exhibited a similar sense of unity with the outer world, combined with unconsciousness in regard to ethical questions. The so-called problem of substance engaged the attention of philosophers, giving rise to the formation of two opposite schools who agreed only in the doctrine of deception by the senses. This doctrine was adopted by the Sophists, who declared that as the senses do deceive, one man's opinion is quite as good as that of another. At this point Socrates appeared, and he is rightly termed by the author a missionary, for he had a gospel, the preaching of which led him to a martyr's death. The life work of Socrates, says Professor Wenley, was "to turn investigation from matter